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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,388	03/18/2005	Ari Karkkainen	4090-11	4684
23117 7590 07/15/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
KALAM, ABUL				
ART UNIT		PAPER NUMBER		
2814				
MAIL DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/528,388

**Applicant(s)**

KARKKAINEN, ARI

**Examiner**

Abul Kalam

**Art Unit**

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 2-13, 15-20, 24-37, 43, 44 and 46-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 14, 21-23, 38-42 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/18/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group III in the reply filed on March 28, 2008, is acknowledged. Claims 1, 14, 21-23, 38-42 and 45 read on the elected embodiment.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Dawes et al. (6,144,795).

With respect to claim 1, Dawes teaches a substrate-based assembly (10, fig. 1) for carrying optical and/or electrical components ("optical waveguide device," col. 3, Ins. 60-67), the substrate based assembly comprising a packaging layer (16, fig. 1; col. 4, Ins. 3-10), wherein the packaging layer comprises a glass material having both organic and inorganic components (col. 4, Ins. 3-10).

With respect to claim 45, Dawes teaches an optoelectronic equipment (col. 18, Ins. 54-58) comprising substrate-based assembly according to claim 1.

2. Claims 1, 21-23, 38, 39 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Fallahi et al. (US 6,436,613).

With respect to claim 1, Fallahi teaches a substrate-based assembly (figs. 1a and 1b) for carrying optical and/or electrical components (col. 2, Ins. 59-67), the substrate based assembly comprising a packaging layer (col. 3, Ins. 6-30), wherein the packaging layer comprises a glass material having both organic and inorganic components (col. 3, Ins. 11-19; col. 9, Ins. 35-57).

With respect to claims 21 and 22, Fallahi teaches a substrate-based assembly of claim 1, further comprising at least one optical component and at least one integrated circuit (col. 1, Ins. 23-55; col. 14, Ins. 30-36).

With respect to claim 23, Fallahi teaches a substrate-based assembly of claim 1, further comprising at least one passive optical component and one active optical component (col. 12, Ins. 41-47).

With respect to claims 38 and 39, Fallahi teaches a substrate-based assembly of claim 1, further comprising optical component, such as laser (col. 12, Ins. 41-47).

With respect to claim 45, Fallahi teaches an Opto-electronic equipment (figs. 17-21) comprising a substrate-based assembly according to claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fallahi ('613, cited above) in view of Tabucci (US 5,909,524).

With respect to claims 14 and 40-42, Fallahi discloses all the limitations of the claims, with the exception of explicitly disclosing wherein the optical component is a bump-bonded or flip-chip mounted. However, Tabucci discloses an analogous substrate-based assembly (Fig. 22) wherein the active optical component (laser diode 240, fig. 26A-26B) is bump bonded or flip-chip mounted (col. 1, ln. 50: "flip-chip") in the assembly. Regarding the limitation of an optical modulator, which is recited in claim 42, Fallahi discloses passive glass waveguides, such as filters, splitters, etc. (col. 12, lns. 41-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to incorporate the flip-chip laser diodes of Tabucci, into the assembly of Fallahi, because flip-chip structures provide better electrical connections and reduce the size of the package. Furthermore, flip-chip devices are well known and conventional in the semiconductor art.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abul Kalam whose telephone number is (571)272-8346. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. K./  
Examiner, Art Unit 2814

/Phat X Cao/  
Primary Examiner, Art Unit 2814